

**Abstract**

It is possible to produce a decoded image with a high image quality from data of the lowermost hierarchy obtained during hierarchical coding operation. An image of a first hierarchy equal to  
5 an original image is successively thinned in thinning units so that an image of a second hierarchy and an image of a third hierarchy are formed. Then, in an optimum correction data calculating unit, the image of the second hierarchy is corrected, a prediction value of the image of the first hierarchy is predicted from the resultant correction  
10 data, and correction data of the image of the second hierarchy is generated to reduce a prediction error of the prediction value lower than a preselected threshold. In another optimum correction data calculating unit, correction data of the image of the third hierarchy is similarly obtained.